NEPA, Noise and the F/A-18 E/F

Final Environmental Impact Statement (FEIS)
for the Introduction of F/A-18 E/F (Super Hornet) Aircraft
to the East Coast of the United States

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The Super Hornet

- Latest version of the Hornet aircraft with state of the art mission capability
- West Coast Super Hornets are stationed in California at NAS Lemoore

History of Super Hornet

1995 • Congress approved initial test production

1998 • West Coast introduction begun

2000 • Congress authorized full production (to include the Atlantic Fleet)

• East Coast EIS Scoping Meetings

History of Super Hornet - continued

2002
- Draft EIS (DEIS) made available for public review
- DEIS Comment Period and Public Hearings

July 2003
- Final EIS (FEIS) released

Sept 2003
- Record of Decision

Jan 2004
- Lawsuits filed 2004

Proposed Action

- Provide facilities and functions to support the homebasing and operation of 10 Super Hornet fleet squadrons (120 aircraft) and the Fleet Replacement Squadron (24 aircraft)
  - Replace Tomcat and earlier model Hornet aircraft
  - Construction of support facilities:
    - Aircraft support (hangars, runways, refueling, etc.)
    - Maintenance
    - Training
    - Personnel support (medical, dental, etc.)
    - Housing

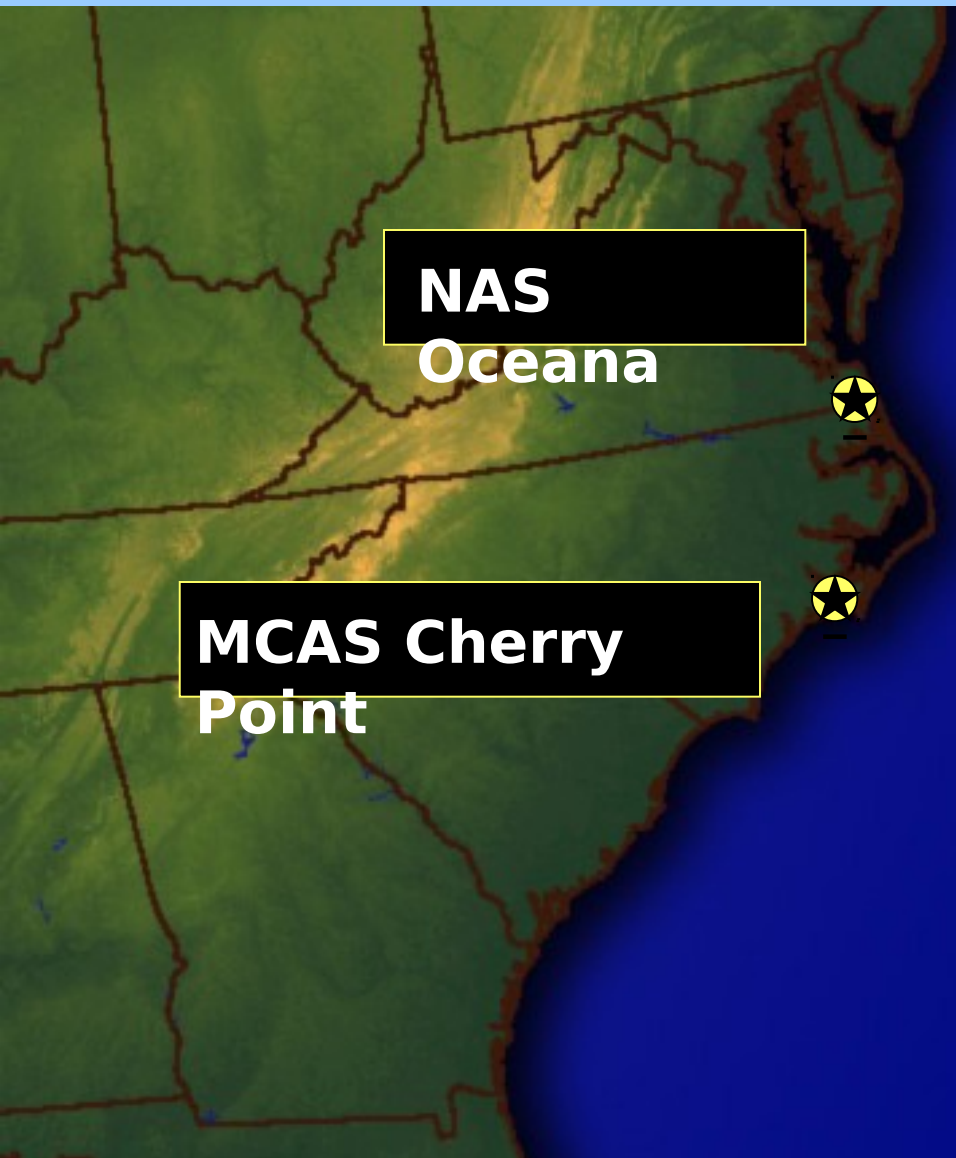
Basing Alternatives Considered

- ALT 1**:** All 10 fleet squadrons and the FRS at NAS Oceana
- ALT 2: All 10 fleet squadrons and the FRS at MCAS Cherry Point
- ALT 3: All 10 fleet squadrons and the FRS at MCAS Beaufort (Existing USMC assets move to MCAS Cherry Point)
- **ALT 4A: 6 fleet squadrons and the FRS at NAS Oceana, 4 fleet squadrons at MCAS Cherry Point**
- ALT 4B: 6 fleet squadrons and the FRS at NAS Oceana, 4 fleet squadrons at MCAS Beaufort
- ALT 5A: 6 fleet squadrons and the FRS at MCAS Cherry Point, 4 fleet squadrons at NAS Oceana
- ALT 5B: 6 fleet squadrons and the FRS at MCAS Cherry Point, 4 fleet squadrons at MCAS Beaufort
- **ALT 6: 8 fleet squadrons and the FRS at NAS Oceana, 2 fleet squadrons at MCAS Cherry Point**

The Decision

- 8 Super Hornet squadrons (96 aircraft) and 1 Fleet Replacement Squadron (24 aircraft) at Naval Air Station Oceana in Virginia Beach, Va.
- 2 squadrons (24 aircraft) at Marine Corps Air Station Cherry Point in North Carolina.
- Construction of an OLF in North Carolina

The Decision



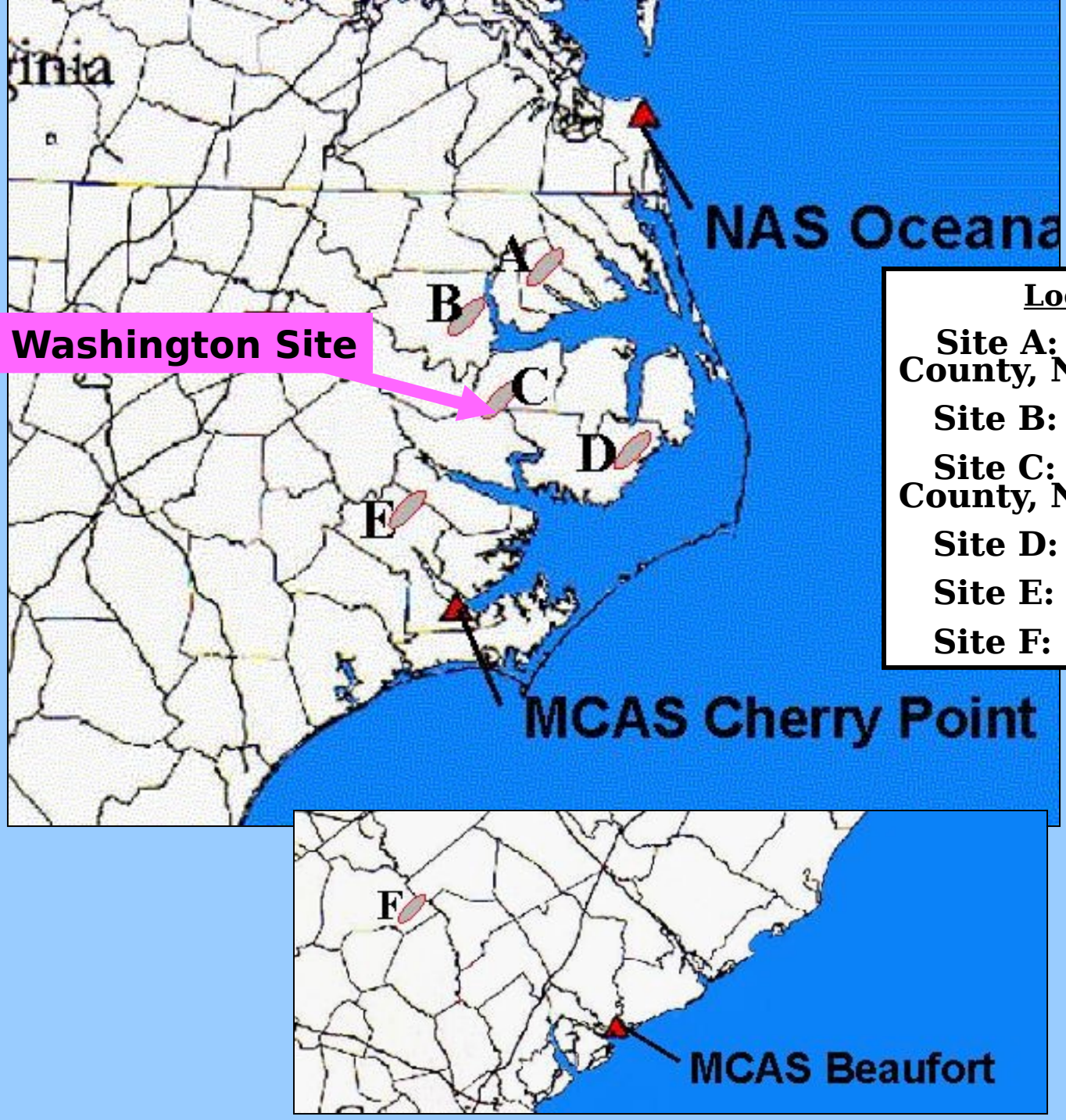
ALT 6

- Majority of fleet aircraft based at NAS Oceana
  - Optimizes readiness
  - Achieves economics of scale
- Provides some noise and air quality mitigation

Proposed OLF in Washington County

- 8,000’ Runway
- LAND Acquisition
- 3000 acre core area
- Total of about 30,000 acres within 60db noise contours
- 30,000 Field Carrier Landing Practices (FCLPs) Per Year
- Rural County of 13,700 people

Candidate OLF Sites



Washington Site

Location Legend:

Site A: Perquimans County, NC

Site B: Bertie County, NC

Site C: Washington County, NC

Site D: Hyde County, NC

Site E: Craven County, NC

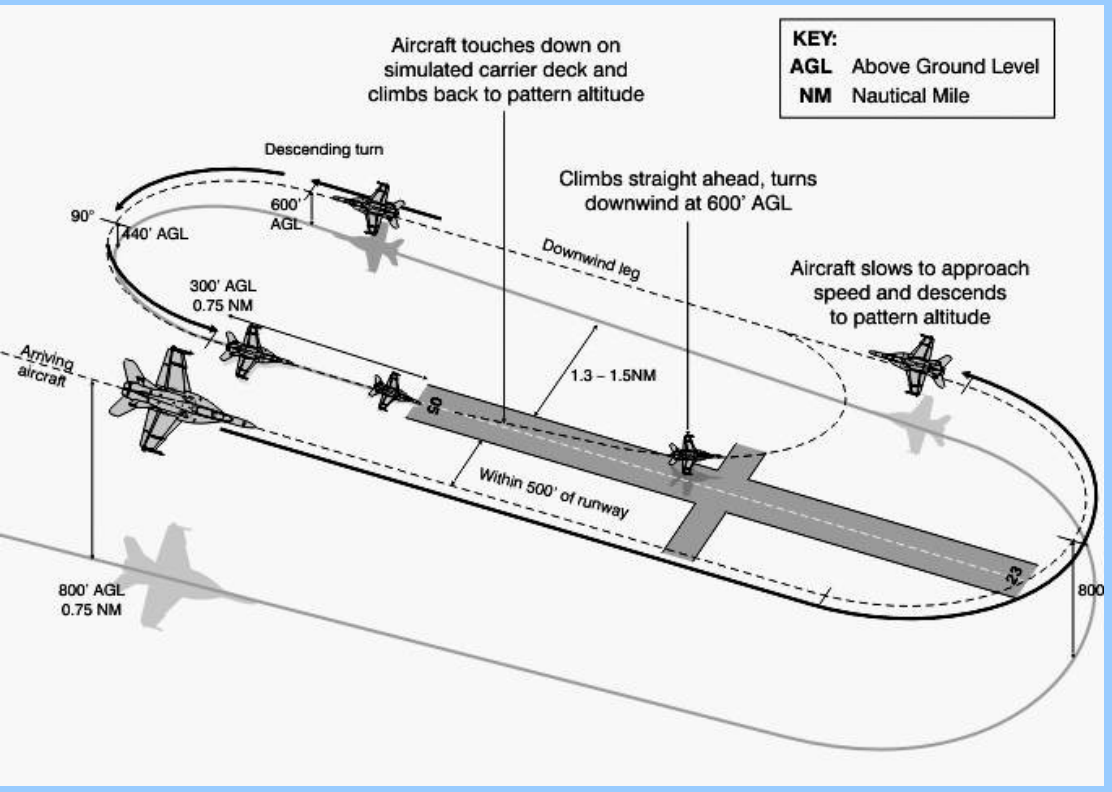
Site F: Burke County , GA

A
B
C
D
E
F

Washington County NC OLF Site

- Easily accessible from NAS Oceana and MCAS Cherry Point
- Operationally ideal
- Low population density
- Compatible land use
- Lack of encroachment pressure
- Projected 32,000 annual operations
- Operational temp will be cyclic
- **Wildlife refuge 5 miles away**

Field Carrier Landing Practice - FCLP



- Trains pilots for landing on aircraft carriers
- FCLP operations are conducted on a runway that simulates the aircraft carrier deck

How to Present Noise Impacts?

- Day-night average (DNL) noise contours
- Different resources impacted
  - Sometimes DNL is just not enough
- Augmented DNL with:
  - Noise equivalent sound level (Leq) for school days
  - Specific DNL for locations of interest
  - Sound Exposure Level (SEL) data
  - Onset-Rate Adjusted Monthly DNL (or Ldnmr)

Day-Night Average

- Presents 24-hour average noise metric
  - Takes into account frequency of operations, loudness of aircraft, duration of noise event and location of operations
  - 10 dB penalty for nighttime operations
  - Presented as a series of noise contours – usually to 65 dB
  - Measure of annoyance
- Most common noise metric used in EISs
- Criticized by many
  - “Not what I hear!!!!”

Oceana/Fentress Alt 6 Noise Contours (w/ OLF)

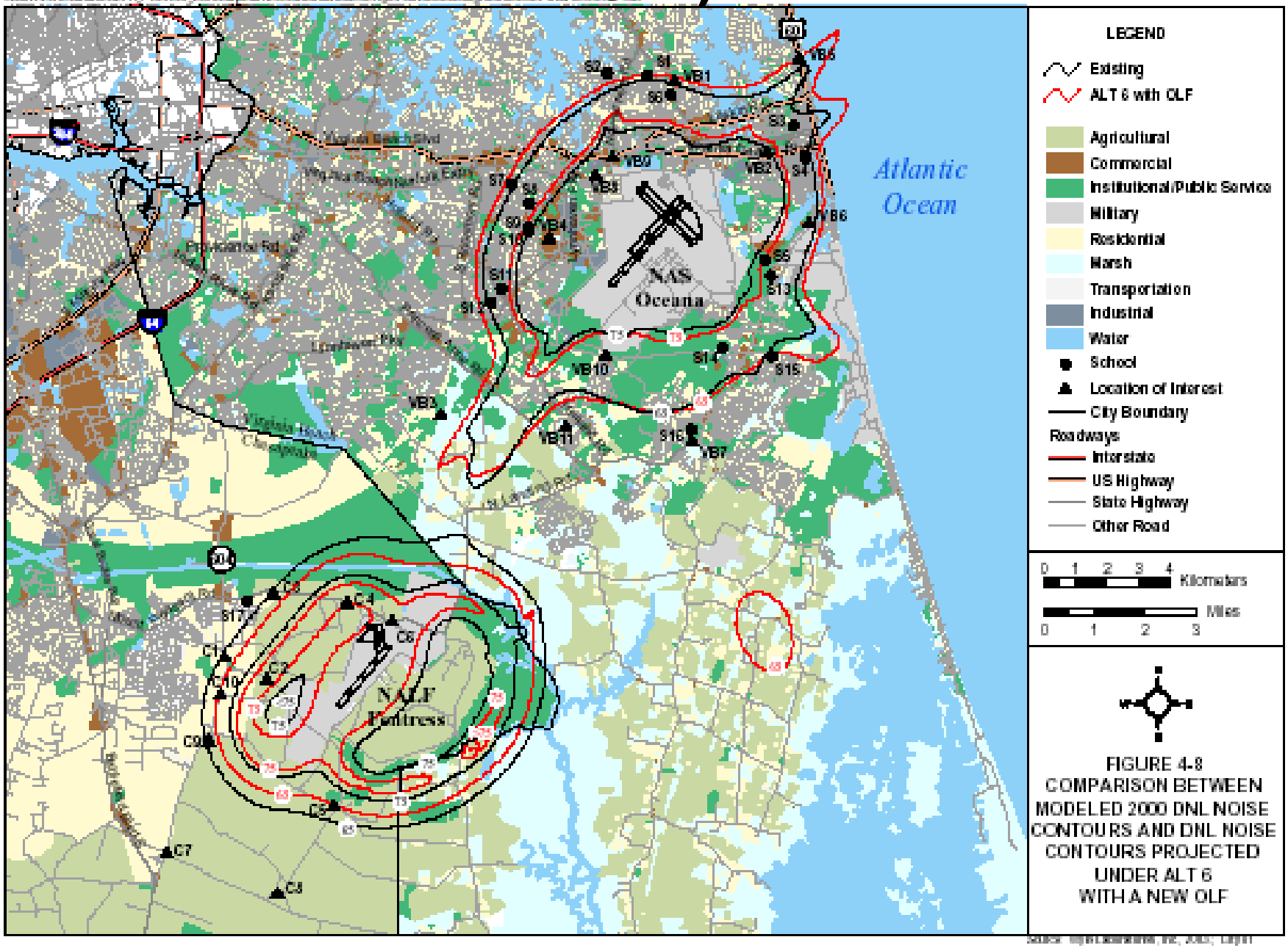


FIGURE 4-8
COMPARISON BETWEEN MODELED 2000 DNL NOISE CONTOURS AND DNL NOISE CONTOURS PROJECTED UNDER ALT 6 WITH A NEW OLF

Noise Impacts

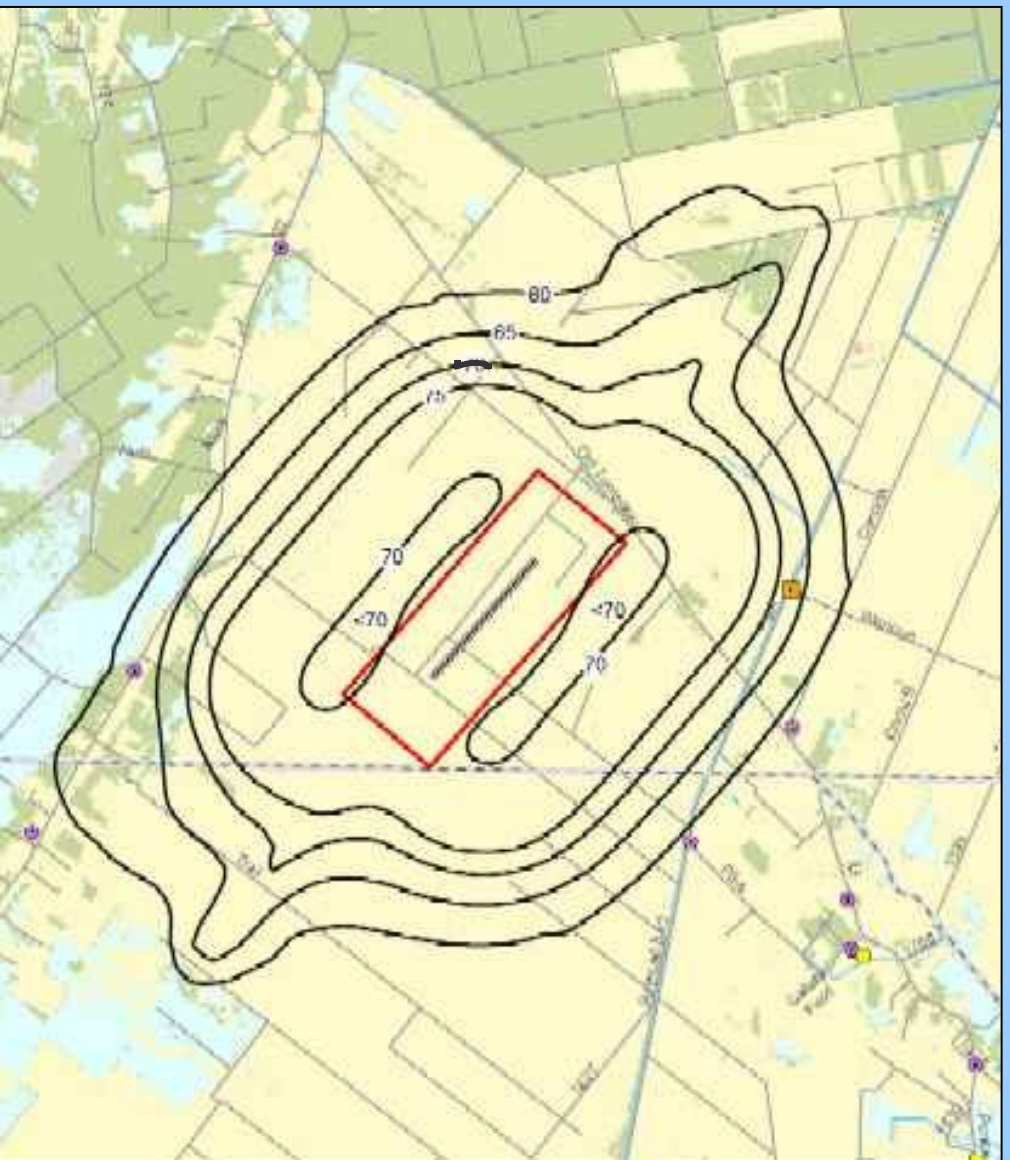
- NAS Oceana - Increases population within the 65+ DNL contour by:
  - 10,031 (11% increase from 2000 baseline)
- MCAS Cherry Point - Increases population within the 65+ DNL contour by:
  - 202 (2% increase from 2000 baseline)

Table 4-9 Off-Station Area (Acres) and Estimated Population within Projected Noise Zones at NAS Oceana and NALF Fentress under Dual-Siting Alternatives 4A and 4B

	Existing		ALT 4A without OLF		ALT 4A with OLF		ALT 4B without OLF		ALT 4B with OLF	
	Area	Pop.	Area	Pop.	Area	Pop.	Area	Pop.	Area	Pop.
65 to 70 dB	13,076	37,428	14,950	37,216	14,185	34,391	15,411	38,887	14,729	35,571
70 to 75 dB	9,151	26,752	9,980	29,035	9,698	28,899	10,192	29,396	9,809	29,435
75 dB or greater	12,462	23,349	15,916	32,863	10,212	31,552	16,331	33,987	11,158	32,917
Total	**34,689**	**87,529**	**40,846**	**99,114**	**34,095**	**94,842**	**41,934**	**102,270**	**35,696**	**97,923**
Net Change			**6,157**	**11,585**	**(594)**	**7,313**	**7,245**	**14,741**	**1,007**	**10,394**
Percent Net Change			**18%**	**13%**	**(2%)**	**8%**	**21%**	**17%**	**3%**	**12%**

Source: Wyle Laboratories, Inc., 2003.

Noise Zones – Site C (Washington County, NC)



- Flight Operations
  - 31,652 ops/year
- Noise Zones
  - 24,000 acres
- Population
  - 141 people

Population Within the 60 DNL Contour at the OLF Sites

Table 12-3 Estimated Population within Modeled Noise Zones at OLF Sites A, B, C, D, and E Under ALT 1 and ALT 3 for Site F

Proposed OLF Site	County	Noise Zone[a] 60-65	65-70	70-75	>75	Total Population by County	Total Population by Site
Site A	Perquimans	204	159	95	140	598	606
	Pasquotank	8	0	0	0	8	
Site B	Bertie	203	156	91	211	661	661
Site C[b]	Washington	60	23	15	26	124	141
	Beaufort	15	0	2	0	17	
Site D[c]	Hyde	74	48	9	0	131	131
Site E[b]	Craven	289	151	78	163	681	687
	Beaufort	4	2	0	0	6	
Site F	Burke	90	46	75	181	392	393
	Allendale	1	0	0	0	1	

[a] Population estimates are based on an assumption of equal population distribution throughout the noise zones. In actuality, the population within these contours would be expected to be considerably lower.

[b] For the two preferred OLF sites, the Navy conducted house counts to determine the actual population within each of the projected noise contours. Total number of houses counted were multiplied by the average number of people per household in Washington, Craven, and Beaufort counties, as determined by the U.S. Census.

[c] Because Hyde County is a single census tract, with no differentiation in population trends within the county, these numbers are not representative of the actual populations within the noise contours. Based on field surveys, these estimates are likely significantly higher than actually occur.

Site Analysis - Noise Impacts

Increase or decrease in percentage of population within 65 DNL contour

Alternatives			Oceana		Cherry Pt		Beaufort	
	Baseline		**87,529**		**8,713**		**4,934**	
1	Oceana		+20,838	**24%**				
		w/ OLF	+14,765	**17%**				
2	Cherry Point	w/ OLF	-23,487	**-27%**	+2,721	**31%**		
3	Beaufort	w/ OLF	-19,650	**-22%**	+766	**9%**	+1,139	**23%**
4A	6/4 Oceana/Cherry Pt		+11,585	**13%**		**0%**		
		w/ OLF	+7,313	**8%**	+791	**9%**		
4B	6/4 Oceana/ Beaufort		+14,741	**17%**			-149	**-3%**
		Beaufort OLF	+14,741	**17%**			-143	**-3%**
		Oceana OLF	+10,394	**12%**			-149	**-3%**
		Oceana OLF/Beaufort OLF	+10,394	**12%**			-143	**-3%**
5A	6/4 Cherry Pt/Oceana	w/ OLF	-11,649	**-13%**	+2,238	**26%**		
5B	6/4 Cherry Pt/Beaufort	Cherry Pt OLF	-19,650	**-22%**	+2,238	**26%**	-149	**-3%**
		Cherry Pt OLF/Beaufort OLF	-19,650	**-22%**	+2,238	**26%**	-143	**-3%**
6	8/2 Oceana/Cherry Pt		+16,759	**19%**	+228	**3%**		
		w/ OLF	+10,031	**11%**	+202	**2%**		

Site Specific DNL

- Locations of interest
  - Worked with local community to help identify
  - All public schools were included if in noise contours
- Presented DNL value for each location
- Most people lived near a site chosen
  - Able to get a good feel for how loud at their house
- Criticism
  - “Still using average!!!”

Table 4-18 Average Noise Levels Projected at Representative Other Locations of Interest Near NAS Oceana and NALF Fentress under Dual-Siting Alternatives 5A and 6[a]

Identification Number[b]/Name	Existing		ALT 5A		ALT 6 without OLF		ALT 6 with OLF	
	DNL (dB)	L_{eq} (dB)	DNL (dB)	L_{eq} (dB)	DNL (dB)	L_{eq} (dB)	DNL (dB)	L_{eq} (dB)
Virginia Beach								
VB1 Virginia Beach Sentara Hospital	65	65	63	63	66	66	66	66
VB2 Virginia Beach Pavilion	76	76	75	74	79	78	79	78
VB3 Verizon/Virginia Beach Amphitheater	59	57	57	56	61	59	60	58
VB4 Lynnhaven Mall Shopping Center	79	77	79	76	82	80	82	80
VB5 Cavalier Hotel	63	63	61	62	64	64	65	64

Sound Exposure Level (SEL)

- Sound exposure represents both intensity and duration of a sound
  - Net impact of an entire acoustic event
- Better represents what people will actually hear
- EIS provided SEL data for generic events and for top five events at each location of interest
- Criticisms
  - Very few

Table 4-19 Comparison of Representative SEL Values (dB) for Aircraft on Approach, Departure, and in the FCLP or Touch-and-Go Pattern

Operation	Altitude (ft AGL)	F-14A	F-14B/D	F/A-18 C/D	F/A-18 E/F	AV-8B	EA-6B
Approach	1,000	93	87	109	114	103	107
Departure	1,000	110	108	117	117	113	114
FCLP[a]							

Summary – Lessons Learned

- DNL is a good metric and should be used
- Should consider augmenting DNL with other metrics such as Leq and SEL
  - Reader friendly
  - Go the extra mile
- Use good maps!
- Keep it simple

The Way Ahead

2004 • FRS Standup

2005 • Construction of OLF begins

2007 • OLF complete

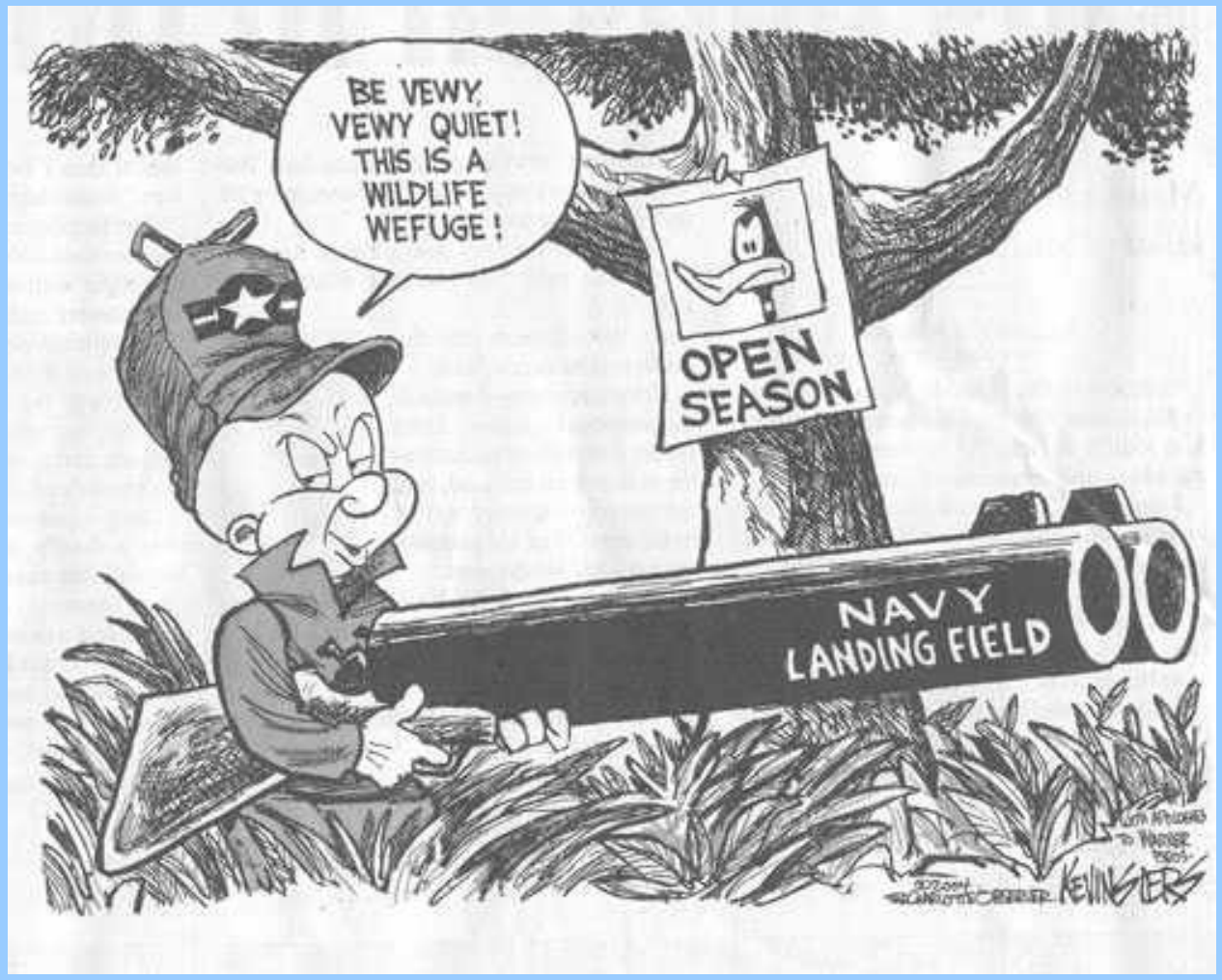
2010 • Homebasing complete

Opponents

FOR AN UNLIMITED ENGAGEMENT
DAY AND NIGHT - SEVEN DAYS A WEEK
The SOUND of OUTRAGE!
FLYING SOON OVER A NEIGHBORHOOD NEAR YOU !
YOU WILL NOT BE ABLE TO MISS IT !
LEARN HOW WE CAN STOP THIS OUTRAGE !
NO_OLF
http://www.AlbemarleCommunity.Net

Opponents

The Grim Reaper


BE VEWY VEWY QUIET! THIS IS A WILDLIFE WEFUGE!
OPEN SEASON
NAVY LANDING FIELD
KEVINSIERS